

What is claimed is:

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1. A human inflammatory breast cancer xenograft, wherein the xenograft grows within lymphatic and blood vessel channels and comprises the following properties:
 - i) does not express estrogen receptor and progesterone receptor; and
 - 5 ii) expresses P53, EGFR, MUC1 and E-cadherin.
 2. The xenograft of claim 1, wherein the level of E-cadherin expressed by the xenograft is at least two-fold greater than the level of E-cadherin expressed by a noninflammatory breast cancer xenograft.
 - 10 3. The xenograft of claim 2, wherein the xenograft expresses α -catenin and β -catenin and the levels of α -catenin and β -catenin expressed by the xenograft are at least two-fold greater than the levels of α -catenin and β -catenin expressed by a noninflammatory breast cancer xenograft.
 - 15 4. The xenograft of claim 3, wherein the xenograft does not express Her-2/neu.
 5. A human inflammatory breast carcinoma xenograft designated MARY-X.
 - 20 6. An in vitro culture of a human inflammatory breast cancer xenograft, wherein the xenograft grows as a spheroid and comprises the following properties:
 - i) does not express estrogen receptor and progesterone receptor; and
 - ii) expresses P53, EGFR, MUC1 and E-cadherin.
 - 25 7. The in vitro culture of a human inflammatory breast cancer xenograft of claim 6, wherein the spheroid can attach to a cell monolayer.
 8. The in vitro culture of a human inflammatory breast cancer xenograft of claim 7, wherein the spheroid disadheres from the cell monolayer when exposed to a culture media containing absent Ca^{++} or anti-E-cadherin antibody.
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9. A method of generating the xenograft of claim 1 comprising the steps of:

- (a) obtaining a breast sample from a patient;
- (b) identifying cells in the sample as an inflammatory carcinoma exhibiting florid invasion of dermal lymphatics;
- 5 (c) implanting the sample into an immunocompromised host; and
- (d) identifying the xenograft growing in the immunocompromised host.

10. A non-human animal model for inflammatory breast cancer comprising an immunocompromised host animal inoculated with a human inflammatory breast cancer xenograft, wherein the xenograft grows within lymphatic and blood vessel channels and has the following properties:

- i) does not express estrogen receptor and progesterone receptor; and
- ii) expresses P53, EGFR, MUC1 and E-cadherin.

15 11. The animal model according to claim 10, wherein the immunocompromised host animal is a nude mouse.

12. The animal model according to claim 10, wherein the human inflammatory breast cancer xenograft, is the xenograft designated MARY-X.

13. A method for evaluating at least one agent for treating inflammatory breast cancer comprising:

5 (a) providing a immunocompromised host animal inoculated with a human inflammatory breast cancer xenograft, wherein the xenograft grows within lymphatic and blood vessel channels and has the following properties:

- i) does not express estrogen receptor and progesterone receptor; and
- ii) expresses P53, EGFR, MUC1 and E-cadherin;

10 (b) administering at least one agent to said inoculated immunocompromised host animal; and

(c) evaluating the effects of said agent(s) on the human inflammatory breast cancer xenograft.

15 14. The method of claim 13, wherein at least two agents are evaluated.

15 15. The method according to claim 13, wherein the immunocompromised host animal is a nude mouse.

20 16. The method according to claim 13, wherein the human inflammatory breast cancer xenograft, is the xenograft designated MARY-X.

25 17. The method according to claim 13, wherein the agent evaluated is an antibody.

18. The method according to claim 13, wherein the agent evaluated is an angiogenic inhibitor.

19. A method for evaluating at least one agent for identifying inflammatory breast cancer comprising:

5 (a) providing a immunocompromised host animal inoculated with a human inflammatory breast cancer xenograft, wherein the xenograft grows within lymphatic and blood vessel channels and has the following properties:

- i) does not express estrogen receptor and progesterone receptor; and
- ii) expresses P53, EGFR, MUC1 and E-cadherin;

10 (b) administering at least one agent to said inoculated immunocompromised host animal; and

(c) evaluating the ability of said agent(s) to identify the human inflammatory breast cancer xenograft.

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Sub a' 20. The animal model according to claim 19, wherein the immunocompromised host animal is a nude mouse.

20 21. The animal model according to claim 19, wherein the human inflammatory breast cancer xenograft, is the xenograft designated MARY-X.

22. The method according to claim 19, wherein the agent evaluated is an antibody.

25 23. A method for evaluating the potential of an agent, or a combination of agents, for the prevention of lymphovascular invasion of carcinoma cells comprising the step of:

30 (a) providing a immunocompromised host animal inoculated with a human inflammatory breast cancer xenograft, wherein the xenograft grows within lymphatic and blood vessel channels and has the following properties:

- i) does not express estrogen receptor and progesterone receptor; and
- ii) expresses P53, EGFR, MUC1 and E-cadherin;

(b) administering said agent or said combination of agents to said inoculated host animal; and

5 (c) evaluating the effectiveness of said agent or said combination of agents in the prevention of lymphovascular invasion.

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10 24. The animal model according to claim 23, wherein the immunocompromised host animal is a nude mouse.

25. The animal model according to claim 23, wherein the human inflammatory breast cancer xenograft, is the xenograft designated MARY-X.

15 26. The method according to claim 23, wherein the agent evaluated is an antibody.

27. The method according to claim 23, wherein the agent evaluated is an angiogenic inhibitor.

20 28. A method of identifying a molecule whose expression is modulated in inflammatory breast cancer comprising the steps of:

(a) providing a human inflammatory breast cancer xenograft, wherein the xenograft grows within lymphatic and blood vessel channels and has the following properties:

25 i) does not express estrogen receptor and progesterone receptor; and
ii) expresses P53, EGFR, MUC1 and E-cadherin;

(b) determining the level of expression of at least one molecule in the human inflammatory breast cancer xenograft; and

30 (c) comparing the level expression of the molecule in the human inflammatory breast cancer xenograft to the level of expression of the molecule in a cell having characteristics which are distinct from the human inflammatory breast cancer xenograft.

29. The method according to claim 28, wherein the level of expression of the molecule of the inflammatory breast cancer xenograft is determined by a method selected from the group consisting of: Northern Blotting, Southern Blotting, Western Blotting and polymerase chain reaction.

30. A method of inhibiting the growth of an inflammatory breast cancer metastases in vivo comprising the step of administering an effective amount of an anti-E-cadherin antibody so that the growth of an inflammatory breast cancer metastases is inhibited.

31. A method of detecting an inflammatory breast cancer metastases in vivo comprising the step of administering an effective amount of an anti-E-cadherin antibody so that the inflammatory breast cancer metastases is detected.

32. A conjugate comprising the antibody of claim 30 joined to a cytotoxic agent.

33. The conjugate of claim 32, wherein the cytotoxic agent is an enzyme, lymphokine, oncostatin or toxin.

34. The antibody of claim 31 labeled with a detectable marker.

35. The antibody of claim 34, wherein the detectable marker is an enzyme, a paramagnetic isotope, biotin, a fluorophore, a chromophore, a heavy metal, or a radioisotope.

36. An Fv molecule comprising the antigen binding site of the antibody of claim 30 or claim 31.

37. The Fv molecule of claim 36 which is an sFv molecule.

38. An Fab molecule comprising the antigen binding site of the antibody of claim 30 or claim 31.
39. An Fab' molecule comprising the antigen binding site of the antibody of claim 30 or claim 31.
40. An F(ab') molecule comprising the antigen binding site of the monoclonal antibody of claim 30 or claim 31.
41. A bispecific antibody with a binding specificity for two different antigens, one of the antigens being that with which the antibody of claim 30 binds.
42. A recombinant antibody, comprising human constant regions and murine antigen-binding region, wherein the antibody competitively inhibits the binding of monoclonal antibody HECD-1 to E-cadherin.
43. A method for inhibiting the development or recurrence of a cancer in a patient, comprising administering to a patient an effective amount of an isolated E-cadherin specific polypeptide comprising an antigen binding site from an antibody capable of specifically binding to an E-cadherin polypeptide, and thereby inhibiting the development or recurrence of a cancer in the patient.
44. The isolated E-cadherin specific polypeptide of claim 43, wherein said polypeptide comprises an isolated antibody.
45. The E-cadherin specific polypeptide of claim 44 wherein said antibody is a polyclonal, monoclonal or chimeric antibody.
46. The antibody of claim 45, wherein the antibody is antibody designated HECD-1.
47. A method according to claim 43, wherein the cancer is inflammatory breast cancer.

48. A kit for inhibiting the development or recurrence of a cancer in a patient comprising an isolated E-cadherin specific polypeptide comprising an antigen binding site from an antibody capable of specifically binding to an E-cadherin polypeptide, instructions setting forth a procedure according to any one of the methods of claims 5 30 or 43, and a container for contents of the kit.

49. An article of manufacture, comprising:

a container;

a label on the container;

10 a reagent comprising an isolated E-cadherin specific polypeptide comprising an antigen binding site from an antibody capable of specifically binding to an E-cadherin polypeptide; and

wherein the label on the container indicates that the reagent can be used for inhibiting the development or recurrence of a cancer in a patient.

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